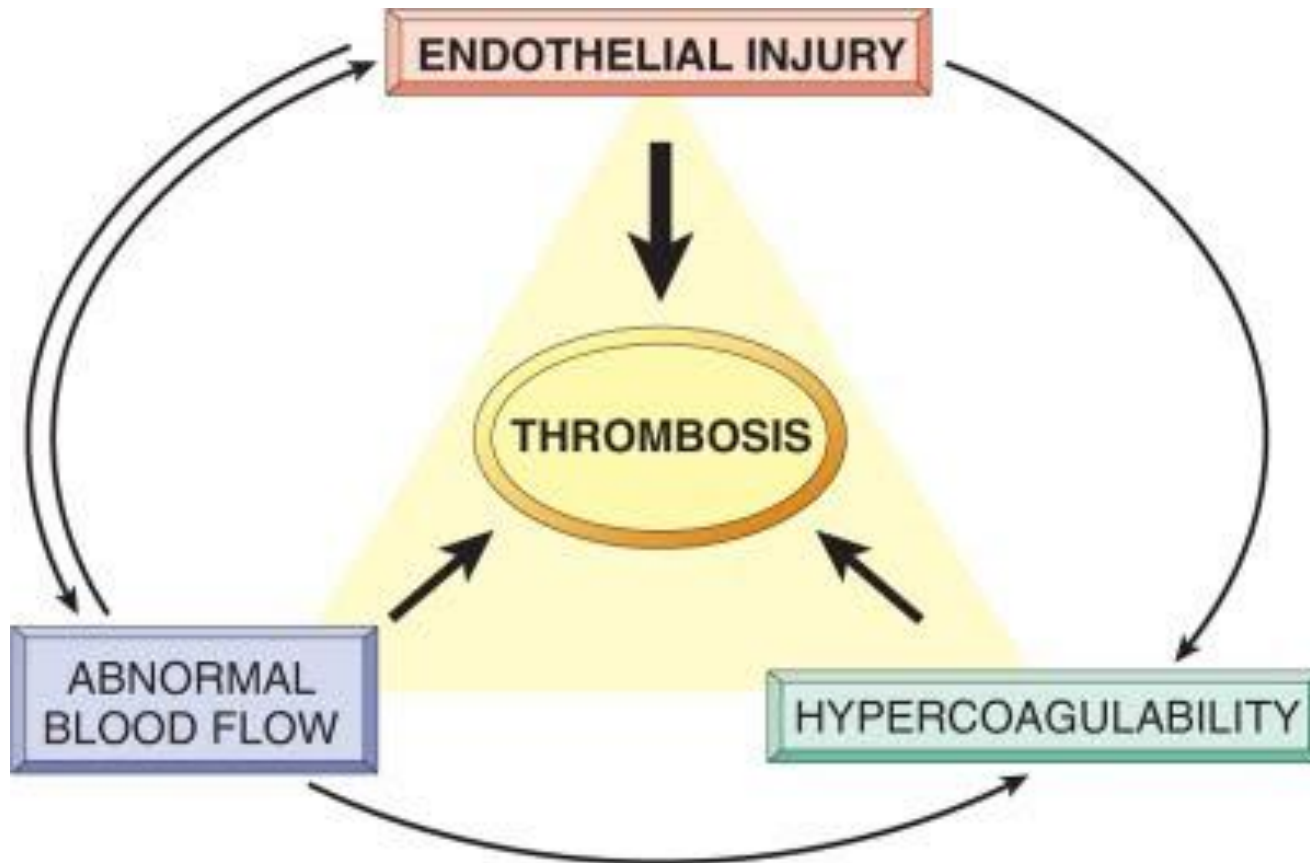


Antiplatelets and Anticoagulants

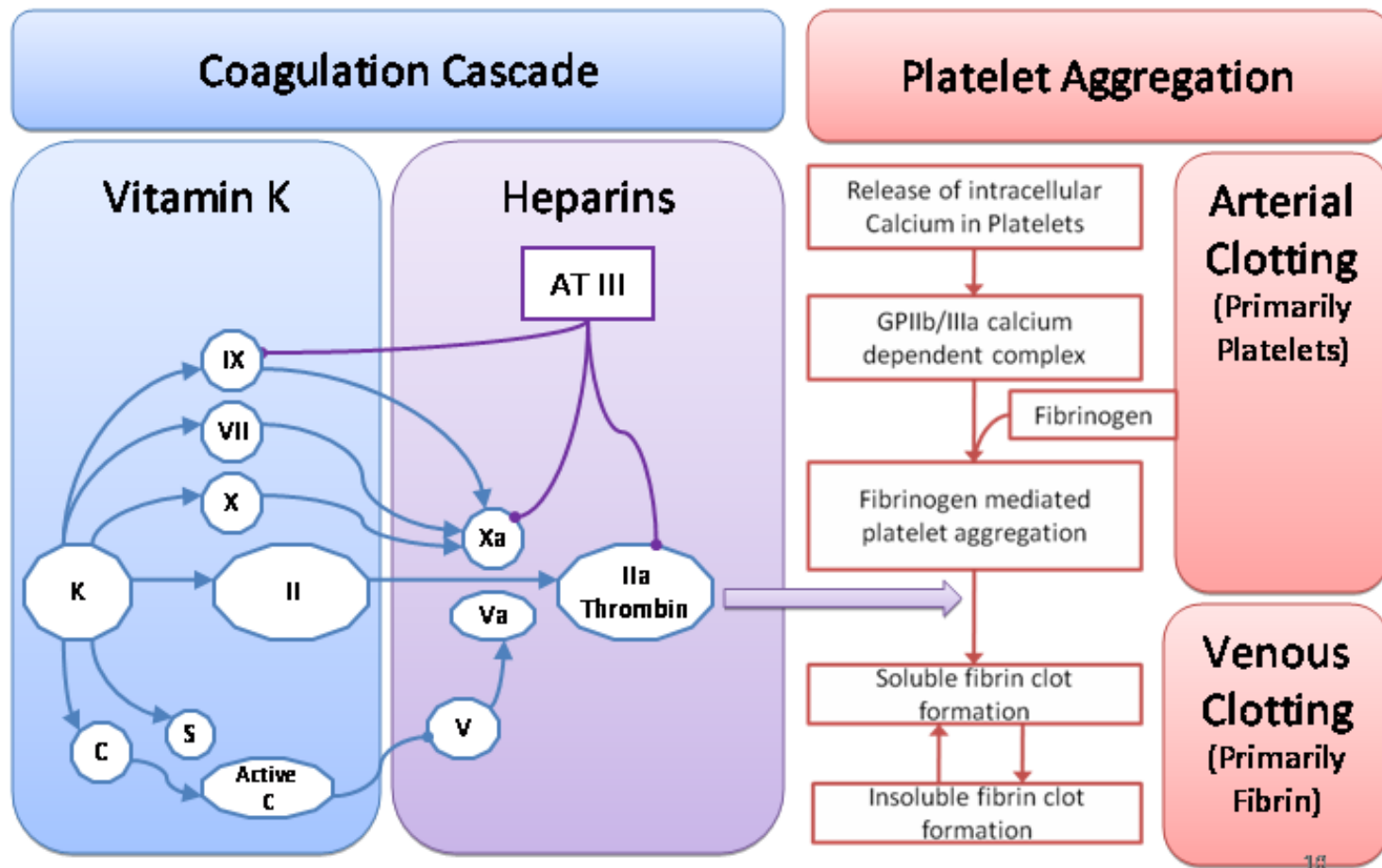
Helen Leung, PharmD
PGY1 Pharmacy Resident
Memorial Hermann-Texas Medical Center

MEMORIAL
HERMANN

Mechanism



Mechanism



Classes

Antiplatelets	Drug (Brand)
Cyclooxygenase-1 Inhibitor	Aspirin
ADP Inhibitors/P2Y12 Inhibitors	Clopidogrel (Plavix) Prasugrel (Effient) Ticagrelor (Brillinta) Cangrelor (Kengreal)
Phosphodiesterase Inhibitor	Dipyridamole/ASA (Aggrenox) Cilostazol (Pletal)
GP IIb/IIIa Inhibitors	Abciximab (ReoPro) Eptifibatide (Integrilin) Tirofiban (Aggrastat)

Classes

Anticoagulants	Drug (Brand)
Heparin	Unfractionated heparin Enoxaparin (Lovenox)
Vitamin K Antagonists	Warfarin (Coumadin)
Factor Xa Inhibitors	Apixaban (Eliquis) Rivaroxaban (Xarelto) Edoxaban (Savaysa) Fondaparinux (Arixtra)
Direct Thrombin Inhibitors	Dabigatran (Pradaxa) Bivalirudin (Angiomax) Argatroban

FDA Approved Indications



Antiplatelet	Anticoagulant
Stroke prophylaxis/treatment	Stroke prophylaxis
Acute coronary syndromes	Acute coronary syndromes
Peripheral vascular disease	Atrial fibrillation/flutter
	DVT prophylaxis/treatment
	Pulmonary embolism
	Heart valve replacement

Castaigne A, et al. Indications for Antiplatelet Medications. *Rev Prat.* 1999 Oct 1;49(15):1635-9.

Wigle P, et al. Updated Guidelines on Outpatient Anticoagulation. *Am Fam Physician.* 2013 Apr 15;87(8):556-566.

Antithrombotic Therapy. *American Society of Hematology.* 2008 Dec.

Antiplatelets

MEMORIAL
HERMANN

- ADP Inhibitors/P2Y12 Inhibitors
- Drugs: **clopidogrel, prasugrel, ticagrelor, cangrelor (IV)**
- Clopidogrel most commonly used
 - 15-40% of patients are poor responders
 - Prasugrel not impacted by reduced CYP enzyme function

- Drug specific contraindications

Medication	Contraindications
Prasugrel	History of stroke/TIA, weight <60 kg, severe renal/hepatic impairment, age ≥ 75
Ticagrelor	History of intracranial hemorrhage, Concurrent use with aspirin >100mg daily

Anticoagulants

MEMORIAL
HERMANN

- **Heparin**
 - Unfractionated heparin
 - low molecular weight heparin
- **Warfarin**
 - Monitoring: titrated based on INR

- Factor Xa Inhibitors
- Drugs: **apixaban, rivaroxaban, edoxaban, fondaparinux (SQ)**
- Renal patients: apixaban preferred
- Administration
 - May crush and mix with apple sauce or water

Warfarin vs new oral anticoagulants

- Advantages
 - Reversible
 - Mechanical heart valves
- Disadvantages
 - Monitoring
 - Higher risk of major bleeding

- Direct Thrombin Inhibitors
- Drugs: **dabigatran, bivalirudin (IV), argatroban (IV)**
- Bridging to warfarin with bivalirudin or argatroban
 - Elevates PT/INR; requires specific holding instructions and modified INR goal while bridging

- Dual antiplatelet therapy (DAPT)
 - Aspirin + ADP inhibitor
 - PCI w/drug eluting stent
- Double vs triple antithrombotic therapy
 - Anticoagulant + aspirin or ADP inhibitor
 - Atrial fibrillation + drug eluting stent

Major Contraindications

- Trauma
- Active bleeding
- Intracranial hemorrhage
- GI bleed
- Bleeding disorders

- Signs/symptoms of **bleeding or bruising**
- Hemoglobin
- Platelets
- Drug-specific side effects
- Drug-specific lab tests (i.e. INR for warfarin)

Antiplatelets and Anticoagulants

Helen Leung, PharmD
PGY1 Pharmacy Resident
Memorial Hermann-Texas Medical Center

MEMORIAL
HERMANN